

## PATENT ABSTRACTS OF JAPAN

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KANAMARU MASAMI(54) HIGHER  $\alpha$ -OLEFIN-BASED RESIN AND METHOD OF MANUFACTURING THE SAME

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a higher  $\alpha$ -olefin-based copolymer which has a high melt tension and is highly compatible with a high-stereoregular polypropylene.SOLUTION: The higher  $\alpha$ -olefin-based copolymer is prepared from a 4-20C  $\alpha$ -olefin, which satisfies the following conditions that (1) it contains 95 mol% or more of a structural unit derived from the 4-20C  $\alpha$ -olefin, (2) stress being released after a lapse of 100 seconds from the initiation of stress loading, the recovered strain  $\gamma_r$  during a lapse of 100 seconds after the release and the shear strain  $\gamma$  after the lapse of 100 seconds from the initiation of stress loading have a relation shown in the following expression (1):  $\gamma_r/\gamma \geq 0.10 - 0.025 \log \gamma$ , and (3)  $1 \leq \gamma \leq 1,000$ , and a non-conjugated polyene monomer.

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
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3. In the drawings, any words are not translated.

## CLAIMS

[Claim(s)]

[Claim 1] Following (1) - (3)

(1) The amount  $\gamma$  of shearing strains after it cancels stress after the structural unit originating in the  $\alpha$  olefin of carbon numbers 4-20 passes for 100 seconds since more than 95 mol % and (2) stress load initiation, and 100 seconds pass after that since amount of recovery distortion  $\gamma$  to 200-second progress and stress load initiation is the following formula (1).  
 $\gamma_r / \gamma >= 0.10 - 0.025 \text{Log} \gamma$  (1)

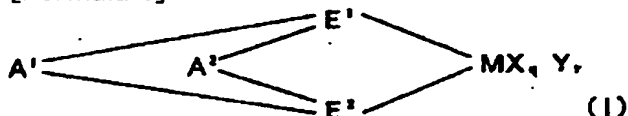
The high-class  $\alpha$  olefin system copolymer obtained from the  $\alpha$  olefin and disconjugate polyene monomer of the carbon numbers 4-20 which are in \*\*\*\*\* and fill \*\* which is (3) 1  
 $<= \gamma <= 1000$ .

[Claim 2] The high-class  $\alpha$  olefin system copolymer according to claim 1 whose  $\alpha$  olefin is 1-butene.

[Claim 3] The high-class  $\alpha$  olefin system copolymer according to claim 1 or 2 whose solid regulation \*\*\*\*\* (mmmm) / [(mmrr) + (rmmr)] is 20 or less.

[Claim 4] (A) General formula (I)

[Formula 1]



M shows the metallic element of the 3-10th groups of the periodic table, or a lanthanoids sequence among [type. E1 And E2, respectively A substituent cyclopentadienyl group, an indenyl group, A permutation indenyl group, a hetero cyclopentadienyl group, a permutation hetero cyclopentadienyl group, It is the ligand chosen from the amide group, the phosphide radical, the hydrocarbon group, and the silicon content radical. A1 And A2 when it minds and the structure of cross linkage is formed, and you may differ even if they are mutually the same, and X shows the ligand of sigma bond nature and there is two or more X, even when two or more X is the same -- differing -- \*\*\*\* -- other X, E1, and E2 Or the bridge may be constructed with Y. When Y shows a Lewis base and has two or more Y, even if two or more Y is the same, it may differ. Other Y, E1, and E2 Or it is the bridge formation radical of the bivalence with which the bridge may be constructed with X and A1 and A2 combine two ligands. The hydrocarbon group of carbon numbers 1-20, the halogen content hydrocarbon group of carbon numbers 1-20, A silicon content radical, a germanium content radical, a tin content radical, -O-, -CO-, -S-, -SO2-, -Se-, -NR1-, --1-, -P(O) R1-, -BR1- or -AlR1- is shown, R1 shows the hydrocarbon group of a hydrogen atom, a halogen atom, and carbon numbers 1-20, or the halogen content hydrocarbon group of carbon numbers 1-20, and even if they are mutually the same, they may differ. q shows [(valence of M) - 2] for the integer of 1-5, and r shows the integer of 0-3. ] The manufacture approach of the high-class  $\alpha$  olefin system copolymer characterized by to carry out copolymerization of the  $\alpha$  olefin and disconjugate polyene monomer of carbon numbers 4-20 under existence of the catalyst for polymerizations containing the component chosen from the compound and (B-2) aluminoxane which come out, react with the transition-metals compound

expressed and the transition-metals compound of (B) (B-1) \*\* (A) component, or its derivative, and can form the complex of ionicity.

[Claim 5] The manufacture approach of a high-class alpha olefin system copolymer according to claim 4 that an alpha olefin is 1-butene.

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